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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,621	10/17/2003	Toshikazu Nakamura	1259-0241P	8893

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EXAMINER

DRODGE, JOSEPH W

ART UNIT	PAPER NUMBER
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1723

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	04/16/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 04/16/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

10/686,621

Applicant(s)

NAKAMURA ET AL.

Examiner

Joseph W. Drodge

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-66 is/are pending in the application.
- 4a) Of the above claim(s) 32-65 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-31 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☒ Claim(s) 32-65 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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Claims 3 and 8-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 3, It is unclear whether a step of dissolving an acidic material in water or a second aqueous solution is related to the step of adding acidic material in claim 1.

In claim 8, it is unclear if the acidic groups of claim 8 are related to the acidic materials cited in independent claim 1.

In claim 15, "said cellulose fiber" lacks antecedent basis.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

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under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-3,5-7 and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Plonsker patent 3,804,815 in view of Hagemeyer et al patent 3,600,463 and Gillberg-Laforce et al patent 5,618,622.

Plonsker discloses creating a polymer solution by dissolving polymers in a solvent at (column 1, lines 11-24 and column 2, lines 61-67), then filtering such polymer solution by passing the polymer solution through a filter medium that may be of polypropylene, cellulosic or other fibrous materials and filter aid materials may be employed (column 3, lines 40-66). A primary purpose of filtration is removal of unreacted and residual catalyst materials (column 3, lines 40-43).

The claims firstly differ in requiring that the filter medium may be coated with filtration aid material(s) that have hydroxyl and carboxyl groups adhered to the filter medium. However, Gillberg-Laforce et al teach to filter industrial liquids used in polymer production (column 1, lines 16-20) with polypropylene, cellulosic or other fibrous materials (column 2, lines 27-47) that are coated with filter aid materials that may include an additive having hydroxyl and carboxyl groups (column 3, lines 10-23 and column 4, lines 30-43). It would have been obvious to one of ordinary skill in the art to have modified the Plonsker process by pre-coating the filter medium with such additive taught by Gillberg-Laforce, to increase adsorption/absorption properties of the filter.

The claims secondly differ in requiring the addition of an acidic material to the polymer solution being filtered. Hagemeyer et al filter the same type of polymer solution being filtered by a filter such as a cloth filter to remove residual catalyst materials (Abstract, column 2, lines 59-70). Such filter may be precoated such as with filter aid; and additionally further filter aid is added to the polymer solution upstream of the filter (column 4, lines 47-75). It would have been obvious to one of ordinary skill in the art to have added additional filter aid to supplement the pre-coating of filter aid of Plonsker, by such addition of additional filter aid, as taught by Hagemeyer, to lower the viscosity of the polymer solution to improve filterability of the solution. Gillberg-Larforce teaches that filter aid in the form of carboxylic acids such as acrylic acid may be added to the filter (column 3, lines 1-30, column 4, lines 31-40 and 51-52). It would have been additionally obvious to have selected the carboxylic or acrylic acid of Gillberg-Larforce as the added filter aid so as to further enhance affinity of the filter surface in adsorbing contaminants being removed from the polymer solution.

Mitigation of ionization of hydrogen atoms in carboxyl groups attached to surfaces is an inherent property of carboxylic acids such as acrylic acid, see the Instant Specification at pages 40-41. The motivation to employ the carboxylic acid, such as acrylic acid, is independent of such inherent property.

For claims 2,3,5 and 6, the acidic material is carboxylic or polycarboxylic acid such as acrylic or methacrylic acid or derivatives thereof (Gillberg-Larforce at column 4, lines 51-53) the recited properties of claims 2 and 3 are inherent thereof.

For claim 7, a wide range of filter materials are described in all 3 recited references.

For claims 10 and 11, filter aid is added to the polymer solution proportionately and at the same rate as polymer and solution (Hagemeyer figure and column 4, lines 57-63).

At claim 66, Gillberg-Laforce teach the groups coating the surface of the filter, hence attached to pore walls on the surface of the filter (column 3, lines 25-28).

ALLOWABLE SUBJECT MATTER

Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 8-14 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claims 15-31 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Claim 4, is distinguished in view of respective recitation of the polymer of the polymer solution being cellulose ester. Hagemeyer et al and Plonsker only are specific to filtering of polymer solutions in processes for co-polymerizing and purifying olefinic hydrocarbon co-polymers.

Claims 8-14 and also 15-31 are now distinguished in view of recitation of the filter medium being of cellulose fibers having substituents or acidic groups substituted for hydrogen atoms on one or more of plural groups of hydrogen atoms on the cellulose fiber. Gillberg-Laforce only teaches substitution of electrolyte or filter aid groups on the surface of hydrocarbon, synthetic fibers, thus excluding cellulose.

Claims 18-26 are now also distinguished in view of requirement that the solvent employed in creating the polymer solution by method steps including adding a pre-determined amount of water to a solvent that is sampled, extracting soluble elements in such sampled solvent be the water and having a hydrogen ion concentration of the solvent adjusted.

Applicant's arguments with respect to claims 1-31 have been considered but are largely moot in view of the new ground(s) of rejection. They will be addressed, especially in view of Gillberg-Laforce et al to the extent they remain germane. It is argued that Gillberg-Laforce does not teach or suggest a feature where one or more substituents or acidic groups are substituted for hydrogen atoms in at least several of the plural hydroxyl groups of the presently claimed cellulose fiber. It is submitted that none of the instant claims require a plurality of hydroxyl groups, and only claims 8 and 15 require substitution of acidic or other atoms or groups for hydrogen groups and cellulose fibers. Even in claim 8, the recited substitution with substituents or acidic groups is not linked to the adding of acidic material(s) in claim 1.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Drodge at telephone number 571-272-1140. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin, can be reached at 571-272-1189. The fax phone number for the examining group where this application is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either private PAIR or Public PAIR, and through Private PAIR only for unpublished applications. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JWD

March 31, 2007


JOSEPH DRODGE
PRIMARY EXAMINER